

AIMS Science Standard Setting

Presented to the
Arizona State Board of Education (AZ BOE)

CTB/McGraw-Hill
June 24, 2008

Overview

- Background
 - ADE and CTB set standards for AIMS reading and mathematics in 2005
 - We presented the Science standard setting plan to you on May 19
- Review the plan
- Describe the standard setting process and recommended cut scores

What is standard setting?

- A systematic procedure that guides experts in making informed judgments about the level of science achievement that students should demonstrate to reach each performance level
- The Arizona science content standards define what students should know and be able to do
- The recommended cut scores define how much they should know and be able to do, and how well

Bookmark standard setting method

- Developed by CTB; one of the most widely used methods
- Distinctive features
 - Performance Level Descriptors
 - Ordered item booklets using 2008 student performance
 - ⁽¹⁾Well informed, ⁽²⁾diverse group of ⁽³⁾experts making ⁽⁴⁾independent judgments

Performance Levels

- Four performance levels:
 - *Falls Far Below the Standard*
 - *Approaches the Standard*
 - *Meets the Standard*
 - *Exceeds the Standard*
- For NCLB reporting to the US Department of Education, *Meets the Standard* is the crucial level

Standard setting workshop

- On June 9–11 Arizona educators were trained to implement the Bookmark procedure
- They recommended cut scores for the *Approaches*, *Meets*, and *Exceeds* levels
- They also refined the Performance Level Descriptors

Standard setting committees

- Three grade level committees; total 35 panelists
 - From around the state
- Three tables per grade level, each with a Table Leader
 - Shared understandings to inform judgments about recommended cut scores

Standard setting workshop

- Recommend cut scores by placing a bookmark
- Information to guide judgment
 - Knowledge and skill demands of items
 - Rationales for locations of bookmarks
 - Impact data
- Three rounds of recommendations with increasing information

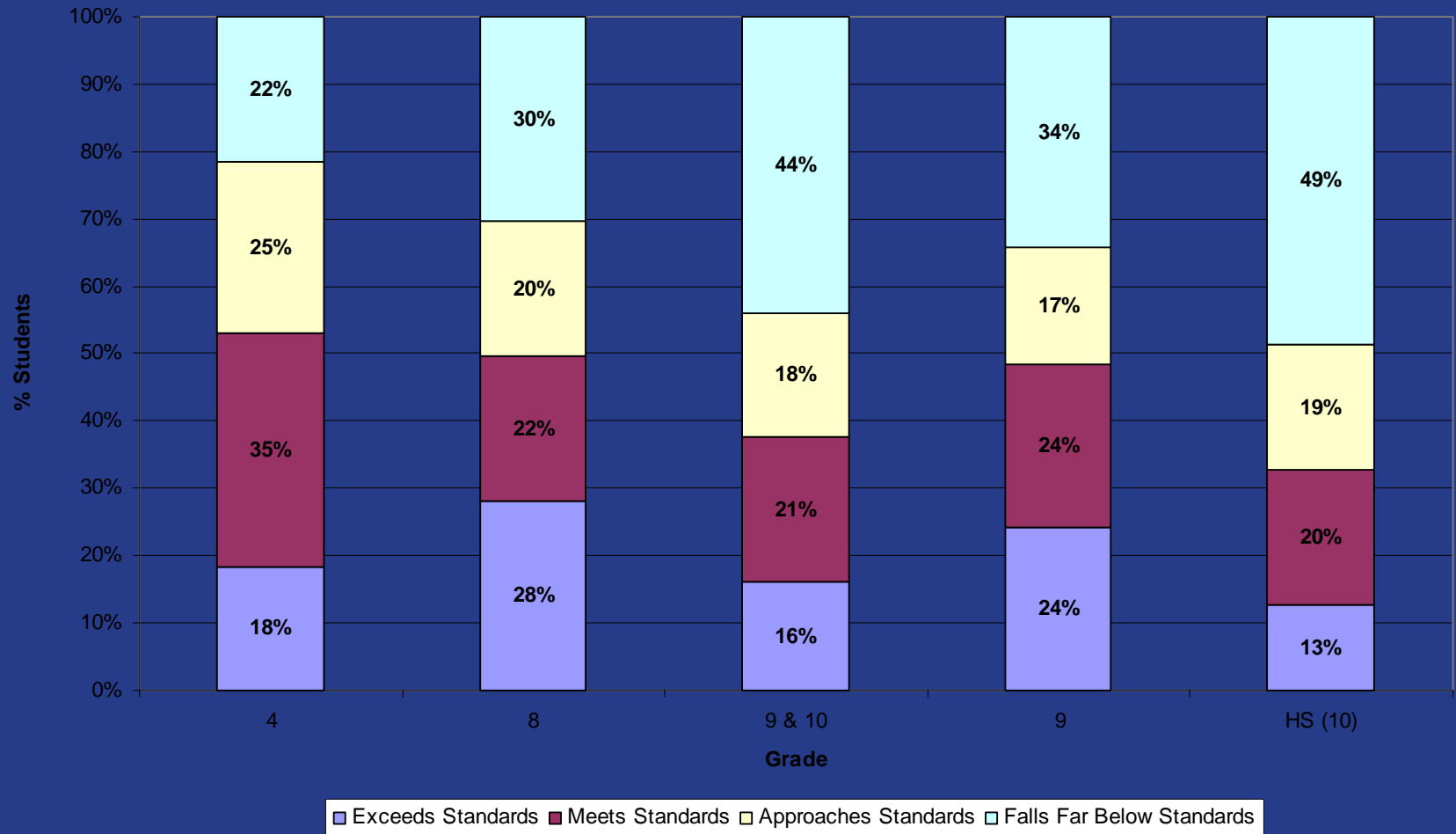
Committee's recommended cut scores and impact (2008 administration)

| | Grade 4 | Grade 8 | HS |
|------------------------|------------|------------|------------|
| Falls Far Below | -- | -- | -- |
| | 22% | 30% | 44% |
| Approaches | 462 | 473 | 475 |
| | 25% | 20% | 18% |
| Meets | 500 | 500 | 500 |
| | 35% | 22% | 21% |
| Exceeds | 547 | 532 | 537 |
| | 18% | 28% | 16% |

Impact (2008 administration)

| | 4 | 8 | HS | 9 | 10 |
|------------------------|------------|------------|------------|-----|-----|
| Falls Far Below | 22% | 30% | 44% | 34% | 49% |
| Approaches | 25% | 20% | 18% | 17% | 19% |
| Meets | 35% | 22% | 21% | 24% | 20% |
| Exceeds | 18% | 28% | 16% | 24% | 13% |
| Meets and Above | 53% | 50% | 38% | 48% | 33% |

Arizona's Instrument to Measure Standards Science Final Round Results: Percent of Students by Performance Level



Percent correct cut scores

| | 4 | 8 | HS |
|------------|----|----|----|
| Approaches | 48 | 52 | 56 |
| Meets | 65 | 64 | 66 |
| Exceeds | 81 | 76 | 78 |

(Based on the scoring lookup table for operational Form A)

Validity of the recommended standards

- 35 participants
- “Overall, I was satisfied with my group’s final bookmarks.”
 - 31.4% agreed
 - 68.6% strongly agreed
- “I am confident that the Bookmark Procedure produced valid standards.”
 - 22.9% agreed
 - 74.3% strongly agreed
 - (97.2% total)
 - 1 high school panelist: lower Exceeds

Questions?

Thanks for your attention!